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In the Matter Of:
CORTZO V. BROWN UNIVERSITY

1:22-cv-00125

HAL J. SINGER, PH.D.

November 27, 2024

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1 controlling for all other factors affected
2 the EFC or affected ultimately the price that
3 the students paid.

4 Q. Since you didn't reverse
5 engineer the formula, you don't know whether
6 the formulas across the defendants were the
7 same; correct?

8 MR. CRAMER: Objection to form.

9 THE WITNESS: Sitting here, I
10 can't tell you that they were identically the
11 same, however, I can tell you that my
12 understanding of the documents was that the
13 objective of the -- of the 568 Group was to
14 steer participants to a common formula and
15 most importantly, to come to an agreement on
16 a floor, that is, it was fine to deviate
17 upwards. You could ask more of the family.
18 But you couldn't go below the floor.

19 BY MR. GRINGER:

20 Q. Okay. I'm going to -- I
21 appreciate that extra context, but I'd ask
22 you to just answer my question. I'll move to
23 strike everything after the word same in that
24 answer.

25 MR. CRAMER: And we will oppose

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1 that motion. It was responsive to your broad
2 question.

3 MR. GRINGER: It was very
4 specific, that question.

5 BY MR. GRINGER:

6 Q. So, just to be clear,
7 Dr. Singer, you did not determine the
8 supposed formula that any defendant used to
9 calculate EFCs; correct?

10 MR. CRAMER: Asked and answered.

11 THE WITNESS: I feel -- I don't
12 think I can do better than the last answer.
13 It's -- we didn't reverse engineer the
14 formula.

15 My assignment was something
16 different, which is to assess whether the
17 conduct caused the EFCs to be higher.

18 BY MR. GRINGER:

19 Q. That was -- that's your
20 assignment was to determine whether the
21 conduct caused EFCs to be higher?

22 MR. CRAMER: Objection to form.
23 Asked and answered.

24 THE WITNESS: My
25 internalization -- the assignment is much

1 broader than that, which was to assess other
2 things, impact, and whether can be shown with
3 common proof and common evidence.

4 But central to the alleged
5 cartel or agreement here, is the notion that
6 the schools got together and came up with
7 common formula with an eye towards dampening
8 competition for this one dimension, among
9 others, but principally the dimension of the
10 EFC and namely to set a floor on the EFC.

11 I internalized that to be to go
12 out and design a model to assess whether the
13 conduct was associated, in fact, caused the
14 EFC to move in a direction that would be
15 consistent with the anticompetitive theory in
16 the case.

17 BY MR. GRINGER:

18 Q. In your first report that you
19 submitted, you didn't make any calculations
20 with regard to EFC at all; correct?

21 MR. CRAMER: Form.

22 THE WITNESS: In the first
23 report, I did not offer my EFC regressions,
24 that is correct. I did not offer those until
25 the second report.

1 BY MR. GRINGER:

2 Q. Why didn't you offer your EFC
3 regression until your second report?

4 A. Right. That's a good question.
5 I think that the -- as I said in
6 my report, what the families ultimately care
7 about from a -- and what economists
8 ultimately care about from a consumer welfare
9 perspective would be what the family ended up
10 paying on that.

11 So, my focus on the first
12 report, as you know, was on the effective
13 institutional price. I'm going to avoid ever
14 saying that verbal thing again by just using
15 the acronym EIP. If you bear with me, I'll
16 try not to have a complete acronym soup
17 today. EFC and IEP are going to come up a
18 few times.

19 Q. Is it your understanding that by
20 applying the consensus methodology, a school
21 can directly calculate an EFC?

22 A. My understanding is that
23 applying the consensus methodology would not
24 give you a crisp formula to use. Instead, it
25 was a set of principals that would guide how

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1 EFC would be calculated in broad strokes.

2 Q. What do you mean by crisp

3 formula?

4 A. I don't think that the 568 Group

5 ever presented an Excel spread sheet and said

6 here's the formula that you should use. I

7 don't think it was that concrete. And I do

8 acknowledge that there was scope for

9 amendments. We know about the exceptions

10 under the professional guidance principal.

11 So, I think that, you know, what

12 I've said, they've agreed to broad

13 principals. And that's what the consensus

14 methodology was aimed at.

15 And, you know, we can tick

16 through the various principals, but, you

17 know, they were able to meet in person and

18 confer, but the major theme that I take away

19 from all the citations, all the depositions,

20 that it appears as if they were trying to

21 establish a floor. They wanted to dampen

22 competition in the sense that, you know, I

23 think Vanderbilt, one Vanderbilt document

24 talked about, you know, competition breaking

25 loose or Georgetown document talked about

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1 moving to the wild, wild west what would
2 happen if we didn't establish the floor and
3 people could just do whatever they wanted to.

4 So, there was a floor and based
5 on certain principals and you could, of
6 course, go over the floor and you wouldn't be
7 in violation of the agreement. But you
8 couldn't go under the floor.

9 Q. So, what was the floor?

10 A. The floor, it's hard for me to
11 define it in real-time here.

12 But I think that we have
13 documents that discuss the floor.

14 Q. Uh-huh.

15 A. Right. And so I think that
16 there was a -- the group got together. They
17 began with the IM, made certain modifications
18 and, you know, they could arrive at what
19 they -- what they thought the group should be
20 paying -- should be asking of the family and
21 nothing less.

22 Q. I understand these people are
23 not in the potential class, but you're aware
24 that at every defendant school there were
25 students who did not have to pay anything

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1 allegedly run afoul of the criteria for
2 getting the exemption.

3 Under which they would come up
4 with common formula, a common set of
5 principals for arriving at student aid
6 packages.

7 Q. Do you know if there were
8 members of the 568 Group who are not
9 defendants in this case?

10 A. I can't think of any members. I
11 mean it's possible, but I can't think of
12 members sitting here that aren't also
13 defendants.

14 Q. You ran regression models in
15 this case?

16 A. Yes.

17 Q. None of your regression models
18 analyzed data from any school that was a
19 member of the 568 Group that is not a
20 defendant in this case; correct?

21 MR. CRAMER: Objection to form.

22 THE WITNESS: I think that's
23 correct. The only way that I could get data
24 is if granular student level data, was if the
25 school was a defendant in this case.

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1 there's data out there for someone who never
2 belonged, then they would always be coded a
3 zero, in which case it would be hard, at
4 least for the technique that I applied to
5 assess the impact of the cartel.

6 Q. Well, I think I was asking you
7 something slightly different than you
8 answered, but maybe not.

9 But I'll just -- I want to be
10 clear. If you wanted to assess whether the
11 challenged conduct had an impact on EIPs or
12 EFCs, do you think it's important to analyze
13 the data for all the members of the alleged
14 cartel?

15 MR. CRAMER: Objection to form.
16 Asked and answered. Incomplete hypothetical.

17 THE WITNESS: I believe that I
18 have assessed all the members in the sense
19 those who are actively participating during
20 the scope of this class period. I don't
21 think that we've omitted anyone.

22 If you're asking me to assume
23 that there's a hypothetical member out there
24 who's data I didn't get, I'm just not aware
25 that there was a member who's data I didn't

1 get.

2 BY MR. GRINGER:

3 Q. I'm asking you for then to just
4 assume that there are members of the 568
5 Group whose data is not included in your
6 regression.

7 Given that, so assume there is
8 that data out there, in assessing whether the
9 challenged conduct had an impact on EIPs
10 and/or EFCs, isn't it important to consider
11 the data from all the group members, not just
12 a subset?

13 MR. CRAMER: Incomplete
14 hypothetical. Objection to form. Asked and
15 answered.

16 THE WITNESS: I don't think that
17 it's critical. If you're asking me as an
18 economist, would I like to see more data, I
19 think economists are never going to turn down
20 that invitation. But I don't think it's
21 critical.

22 If I thought I was missing some
23 important component of the activity of the
24 members of the cartel here, but I don't think
25 I am. I think I've seen all the important

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1 members.

2 BY MR. GRINGER:

3 Q. So, you analyzed that data from
4 Swarthmore College in your regressions?

5 A. No.

6 Q. Do you know Swarthmore College
7 was a member of the 568 Group?

8 A. Sitting here, I can't tell you
9 if they were, but I don't think that they
10 would have, you know, made certain criteria
11 that plaintiffs have required to be a
12 defendant in the case.

13 Q. Do you know if Wesleyan was a
14 member of the 568 Group?

15 A. They may have attended a
16 meeting, but I don't know if they were a
17 member.

18 Q. Do you know if Pomona College
19 was a member of the 568 Group?

20 A. I haven't seen any documents or
21 evidence on Pomona College.

22 Pomona did you say?

23 Q. Yeah, Pomona.

24 A. Yeah.

25 Q. You don't know one way or the

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1 other if they were a member?

2 A. If I don't get to see their
3 documents or data, it's hard for me to say.

4 If the plaintiffs haven't named
5 them as a defendant, my strong surmise is
6 there's something different about Pomona.

7 Q. Is it your strong surmise that
8 maybe it would be inconvenient for the
9 proposed market definition to look at Pomona
10 College?

11 MR. CRAMER: Objection to form.

12 THE WITNESS: Would it -- I mean
13 are you asking me is that the reason why be
14 they didn't name Pomona as a defendant?

15 BY MR. GRINGER:

16 Q. You said you surmised asking.
17 Is that the reason?

18 MR. CRAMER: Objection form.
19 Asked and answered.

20 THE WITNESS: I don't have an
21 opinion on that.

22 BY MR. GRINGER:

23 Q. You don't know whether Pomona
24 college was a member of the 568 Group;
25 correct?

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1 you, Dr. Singer, does a school have to
2 actually do something different?

3 MR. CRAMER: Objection to form.
4 Asked and answered.

5 THE WITNESS: They don't have
6 to. Now it turns out that a lot of people
7 did change their behavior towards students
8 upon leaving. I just went through the list
9 of people who adopted the no-loan policy for
10 the first time, those who threw out home
11 equity from the equation. I think Penn,
12 after the organization disbanded, you know,
13 raised the income threshold from 140 to
14 200,000, according to November Bloomberg
15 article and MIT shortly copied thereafter.

16 So, we do see a lot of -- a lot
17 of revisions to the approach upon leaving,
18 which creates the strong impression to an
19 economist at least that they felt that they
20 were constrained by the strictures of the 568
21 Group.

22 Q. What were the strictures of the
23 568 Group that were constraining the leavers?

24 A. Well, let's talk about the --
25 the no-loan policy, right?

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1 Now, when Yale -- when Yale left
2 in 2008 and announced that it was going no
3 loan, Penn copied Yale from within the cartel
4 and Dartmouth considered this to be
5 blasphemy. Dartmouth thought they were
6 cheating on the cartel; right?

7 And so my reading of the record
8 evidence there would suggest that the members
9 of the cartel felt constrained in moving to a
10 no-loan policy.

11 And we also talked about all the
12 leavers who immediately went to, you know,
13 removed home equity. That again tends to
14 suggest that home equity was -- was something
15 that the group agreed to should be included
16 in the formula; right?

17 So, if you wanted to remove home
18 equity from consideration, it was difficult
19 to do that from within the strictures of the
20 cartel.

21 Q. Uh-huh. So you acknowledge that
22 Penn went to no loans while it was a member
23 of the 568 Group; correct?

24 A. Yes. And I have a section in my
25 report talks about that was largely in

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1 response to what Yale did, but I've also
2 cited multiple other schools that went to no
3 loan upon leaving.

4 We just went through Yale,
5 Emory, Chicago, Brown, there's a lot of
6 schools that went to no loan upon leaving.
7 That suggests to me that while you could do
8 it, it was difficult; right? And Dartmouth
9 would consider you to be bending the rules.

10 Q. Uh-huh.

11 A. Right.

12 Q. What made it difficult for Penn
13 to go to no loan while it was a member of the
14 568 Group?

15 A. I think that my reading of the
16 record suggests that the movement to no loan
17 was not considered appropriate under 568 and
18 that Penn felt compelled to do so in order to
19 stay competitive with Yale who had just
20 broken out and went to no loan and Dartmouth
21 reacted by suggesting that what Penn had done
22 was not in compliance.

23 Q. You're offering an opinion about
24 what Penn thought?

25 MR. CRAMER: Objection to form.

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1 fact, that if we got to, you know, 81 percent
2 of those transactions, you know, suffered
3 impact and of course it's even higher when
4 you consider at least once it would go into
5 the 90s if you considered, you know, the
6 students at Yale who lived through that
7 experience would have suffered impact, I
8 think it's 93 percent.

9 So, that was the regression
10 analysis that I had in mind.

11 Q. Is it your understanding that
12 Penn was the only school to adopt a no-loan
13 policy while it was a member of the 568
14 Group?

15 A. No. There was one other --
16 there was one other one, at least one other
17 one who did it concurrent with Penn. And I
18 think both of those were done in reaction to
19 Yale.

20 It starts with a C and I think
21 it may have been Cornell.

22 Q. Columbia?

23 A. Oh, you know, you try -- there's
24 so many facts here and I just -- I'm trying
25 to remember. For some reason my brain is

1 telling me it was Penn plus someone who
2 started with a C. It could be Columbia, yes.

3 Q. And just tell me the schools you
4 believe adopted a no-loan policy after
5 leaving the 568 Group?

6 MR. CRAMER: Asked and answered.

7 THE WITNESS: Okay. Yeah, let's
8 see how good my memory is compared to seven
9 minutes ago.

10 I think I answered Yale, Emory,
11 Chicago, Rice, Brown went to no loan. Those
12 are the ones that I'm just doing by memory.
13 But I would -- I would probably rather go
14 with what I put in my reports than memory,
15 but that's the best my memory can do.

16 BY MR. GRINGER:

17 Q. When Yale rejoined the 568
18 Group, it continued to have a no-loan policy;
19 correct?

20 A. I don't have that concrete. I
21 think that's consistent with my
22 understanding, but I don't have the histories
23 of each school completely memorized.

24 Q. In your view, is leaving the 568
25 Group the same thing as no longer engaging in

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1 would tend to cause my regression to
2 understate the effect of the conduct.

3 BY MR. GRINGER:

4 Q. Is that something you've looked
5 at, whether there are changes in the results
6 between the benchmark period and the class
7 period at the school level?

8 MR. CRAMER: Objection to form.

9 THE WITNESS: I don't run models
10 of course for individual schools. But I
11 am -- when I code a school as being zero in a
12 given year, I'm assuming, I'm telling the
13 computer to assume that the conduct is off;
14 right?

15 That they are now setting prices
16 no longer pursuant to the strictures of the
17 568. And so to the extent that they don't
18 immediately change, now I'm repeating myself,
19 that would tend to bias these coefficients
20 towards zero.

21 That would cause my methodology
22 to understate the effect of the conduct.

23 BY MR. GRINGER:

24 Q. So, I take it your understanding
25 is that one of the strictures of 568 was that

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1 you can't have a no-loan policy. Is that
2 correct?

3 A. Well, we've been through this
4 before; right?

5 So, Penn obviously did while it
6 was in 568, so, we -- as an economist, I
7 can't infer from that that there's a hard
8 rule that says don't. We know the
9 affordability principle applied to packaging.

10 We see a whole bunch of schools adopting no
11 loans upon leaving. We have record evidence
12 that tells us why Penn and I think you said
13 Columbia did it in response to Yale and
14 Dartmouth thought that they were cheating on
15 the agreement. So, there's a lot there.

16 But I feel like we've been
17 through here before. I fully admit that you
18 could go no loan while inside a 568. Penn
19 did so. I mean no reasonable person could
20 say otherwise.

21 Q. If there was a conspiracy among
22 some, but not all defendants, are your
23 regression models capable of capturing that?

24 MR. CRAMER: Objection to form.
25 Incomplete hypothetical.

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1 THE WITNESS: So I think I got
2 the drift. I just want to drill down. You
3 want me to assume there's a different
4 conspiracy than the one that's been alleged
5 here. Because the one that's been alleged
6 here, the one I've been asked to assess is a
7 single overarching conspiracy that touches
8 all defendants. You're asking me to assume
9 that instead there was a mini conspiracy that
10 only touched a subset; right?

11 BY MR. GRINGER:

12 Q. Right. Right. Same terms,
13 whatever they may be. I'm still, you know,
14 trying to sort through that with you.

15 But same terms but just certain
16 defendants did not participate, is your
17 regression capable of capturing that?

18 MR. CRAMER: Objection to form.

19 THE WITNESS: I mean the
20 hypothesis that I'm testing is whether
21 there's a single overarching conspiracy.

22 So of course as I've implemented
23 it, it couldn't get at these alternative
24 hypotheses.

25 But if you wanted to pause it,

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1 an alternative conspiracy say a mini
2 conspiracy that affected four schools, one
3 could go do that with the caveat that I would
4 like there to be substantial record evidence
5 in support of that. Number one, there should
6 be like an a priori reason for doing that
7 test and number two, it's really, it's -- I
8 don't get to pick the theory of harm; right?
9 And you don't get to pick it either. These
10 guys do. They get to write, it's their
11 theory of harm. They've got a theory and I'm
12 testing that theory. I didn't test other
13 theories.

14 Q. So, if, in fact, let's just say
15 12 of the 17 defendants were in a conspiracy
16 but five were not, you're regression model is
17 still capable of returning a positive conduct
18 coefficient; correct?

19 MR. CRAMER: Objection to form.

20 THE WITNESS: It's capable, but
21 under that fact pattern, if you want me to
22 accept this hypothesis as being true that
23 there were five who I've coded incorrectly as
24 ones, but they should have been zeros, that
25 means that I would have watered down the

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1 (Whereupon, there was a recess.)

2 - - -

3 THE VIDEOGRAPHER: Back on the
4 record. 10:55.

5 BY MR. GRINGER:

6 Q. Welcome back, Dr. Singer.

7 A. Thank you.

8 Q. Am I correct that you use what
9 economists call a before and after approach
10 in your regression models?

11 A. I think that's pretty close.
12 You could before, during, after, but it's --
13 it's -- I think it fairly falls within that
14 family, yes.

15 Q. Are there other methods besides
16 the before, during and after that economists
17 can use to estimate an overcharge?

18 A. Sure.

19 Q. Let's mark as Singer Exhibit 2
20 your second report in this case, which I'll
21 probably call the Singer rebuttal report for
22 lack of a better way. Maybe I'll just refer
23 to it as Exhibit 2.

24 - - -

25 (Whereupon, Deposition Exhibit

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1 \$10,000 jump in the EIPs in the first year
2 and that's a bigger jump than we had ever
3 seen leading up to that. And then we see
4 another jump that I think is on the order of
5 \$20,000.

6 And so, we are very skeptical
7 about what's going on with the post 2016
8 data.

9 I have all other sorts of
10 thoughts on it, too, but I don't want to keep
11 talking. You go ahead.

12 Q. I appreciate that. Thank you.

13 You're making the assumption
14 that the data until 2016 when the database
15 changed is accurate; correct?

16 A. I am making an assumption that
17 it is accurate and I am -- but most
18 importantly, and I think this is I'm going to
19 tee up this dispute, we have variation in the
20 conduct, in the pre '16 period; right?

21 So, whatever infirmities that
22 pre '16 data might have, what's nice is that
23 we can -- we can see how it changes with
24 respect to a change in the conduct.

25 The problem, you know, Dr. Hill

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1 proposed during his deposition, that we
2 should instead only include 2016 post 2016.

3 And the problem with that, I
4 don't know if he's aware or not, but it's
5 just a run of zeros. There's no variation in
6 the conduct during that period.

7 So, if you limit the data that
8 way, you're, by design or by accident,
9 depriving the model of being able to
10 ascertain any effect of the challenged
11 conduct.

12 And if that one was done in
13 isolation, I would say okay, maybe it was an
14 oversight.

15 But there's a theme that emerges
16 in Dr. Hill's criticisms, in that they are
17 almost all appear to be motivated as a way to
18 deprive the regression of the data that it
19 would need to find an effect.

20 We can go through the Chicago
21 example where he chooses post 2016, the
22 killing 2023, which is one of the only years
23 that we have for many of these schools that
24 they weren't in the conduct. He wants it
25 gone from the regression. You know, the

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1 staggered DID deprives it of the Yale
2 experience after they leave. The cluster
3 standard errors we talked about, depriving
4 the classification of errors. Putting in the
5 COVID period through 2024, which of course
6 coincides with the very few clean period
7 observations we have as away to conflate the
8 model and to inject confusion as to what is
9 causing it, between COVID and the conduct.

10 Finally the year fixed effects
11 as opposed to my time is another way to
12 inject collinearity with the conduct and
13 therefore make it harder for the regression
14 to find an effect.

15 I feel like the theme that's
16 emerging from Dr. Hill is that not how to
17 design the best model, but how can I derive
18 the model? How can I, Dr. Hill, deprive the
19 model by making these choices to ever find an
20 effect.

21 I realize it's very convenient
22 for the defendants to not find an effect, but
23 that can't be the load star. The load star
24 can't be let me suggest changes that deprive
25 the model. We have to give the model the

1 data. We have to give it a chance to find
2 these effects.

3 Q. I appreciate all that context.
4 My question was really just are you making
5 the assumption that the data until 2016 when
6 the database changed is accurate? You
7 answered that and then went on, I think, you
8 know, and I don't want to fight with you too
9 hard on this. You're an expert. I
10 understand this. But am going to move to
11 strike everything after the word accurate in
12 this answer.

13 MR. CRAMER: We'll oppose that
14 motion.

15 MR. GRINGER: It was a little
16 lengthy, I think all things considered.
17 BY MR. GRINGER:

18 Q. You don't actually know which
19 data set with regard to Chicago is the
20 accurate data set; correct?

21 MR. CRAMER: Objection to form.

22 THE WITNESS: I know that the
23 two can't be put side by side; right?

24 What I -- and also, when you say
25 accurate, we don't want to hold up the data.

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1 There's no such thing as a pristine database.

2 Every database is going to have a certain

3 amount of infirmities.

4 What I think is more attractive

5 about the pre 2016 is that you at least have

6 variation in the conduct. You at least have

7 the opportunity to see, do prices change when

8 the conduct goes in and out; right?

9 So, if we're forced to chose

10 between pre 2016 and post 2016, to me it's a

11 very easy choice. One gives the model an

12 opportunity to find an effect. It doesn't

13 guarantee an effect but it gives the model an

14 opportunity to find one, if one exists.

15 Dr. Hill's choice precludes the

16 model from finding an effect.

17 If you just have a run of zeros,

18 we can't find an effect. You've basically

19 eliminated Chicago's contribution, right, to

20 informing the conduct variable.

21 Q. How is that any less outcome

22 determinative than what you just criticized

23 Dr. Hill for doing?

24 A. Because there's no guarantee of

25 an outcome. There's no guarantee of an

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1 outcome just because you have zeros and ones.

2 We could run the regression and

3 find that there was no effect; right?

4 But at least you have some

5 period of zeros and some period of ones to

6 test. You have data that you're feeding the

7 model; right?

8 If we take Dr. Hill's approach,

9 which is throw out 2023, you know, just look

10 at Chicago post 2016; right? We're taking

11 away some of the very small sources of

12 variation in the database where you have

13 clean periods, right, or where you have a

14 change in the conduct.

15 If my methodology is let's

16 exploit the changes, and his fixes are just

17 remove the possibility of studying changes,

18 right, then the likelihood of finding an

19 effect is going to vanish.

20 Q. You're the one who removed the

21 2016 to 2022 Chicago data; correct?

22 A. I removed the 2016 because it

23 can't be compared. When you see the \$10,000

24 jump when they change databases and then you

25 see another jump of \$20,000, something is

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1 two percent a year, one to two percent a
2 year, right?

3 So, the 16 does stand out.

4 The other thing that I'm
5 concerned about is you don't have the \$20,000
6 increase that I understand to have happened
7 in Chicago and during a break I can -- I'm
8 happy to get you where that happened as well.

9 BY MR. GRINGER:

10 Q. Well, look. You would agree
11 with me, 37 percent is a greater change than
12 16 percent in EIP; correct?

13 MR. CRAMER: You're asking if 37
14 is more than 16?

15 MR. GRINGER: That's what I'm
16 asking there.

17 THE WITNESS: You got me there.

18 BY MR. GRINGER:

19 Q. Did you look to see, before you
20 concluded that a 16 percent jump in EIP in a
21 particular year was an unreasonably large
22 jump, did you look in the data to see if
23 there were other similarly sized jumps for
24 other defendants?

25 A. I can't recall if I looked at

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1 the other jumps, but again, I didn't make the
2 decision on Chicago based on the jump alone.

3 I did look at what happened to
4 Chicago previously and had I seen a bunch of
5 15s, are you with me, had I seen a bunch of
6 15s in prior years or 16, sorry, I probably
7 would have been more accommodating to the 16.

8 The last thing is I notice that
9 you don't show Chicago for '23. I don't
10 think you've suppressed the \$20,000 jump
11 there; right?

12 Q. Not to my knowledge. I
13 wasn't -- certainly wasn't trying to.

14 A. Okay.

15 Q. I think it just has to do with
16 when you throw the data out for?

17 A. Hill wants to throw out 2013 --
18 2023, but yet you have Emory here in 2023.

19 Q. Just to -- I also want to now
20 talk about Penn.

21 If you go from, which is on Page
22 2 of Exhibit 3.

23 A. Okay.

24 Q. Is there any scenario in which a
25 jump of 83 percent year over year in the EIP

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1 Q. So, you don't use this data in
2 your analysis?

3 A. I think I do. I do. I thought
4 I heard you say '25.

5 Q. Well, it's the '24/'25 academic
6 year.

7 A. Oh, okay. Sorry. Sorry.

8 Q. So you use data for '23 and '24.

9 You use the '24, data even

10 though it was only for early decision

11 applicants; correct?

12 A. You're talking about for Duke

13 right now or --

14 Q. No. For the '24 data you have.

15 A. I know it's a subset, but it was

16 everything the defendants gave me. You know,

17 we asked to produce all data. And this is

18 what they gave us.

19 I don't know if I was cognizant

20 sitting here, if it's early decision only. I

21 don't know if I had heard that before. And

22 that doesn't change my opinion as to whether

23 or not we should make use of it.

24 Q. Why doesn't it change your

25 opinion?

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1 A. Well, because we are trying to
2 figure out in one of these previous few clean
3 periods, if Duke is or not just Duke, the
4 defendants generally, are altering their
5 behavior with respect to financial aid.

6 So, to just, to throw out one of
7 these precious few clean periods is doing a
8 lot of harm in the sense that it's depriving
9 the model of having any chance of finding an
10 effect.

11 Q. Why do you think that's a good
12 reason to consider the data in '24?

13 A. I think I just told you. That
14 we have, for nine of the 17 defendants, we
15 have no pre conduct data; right?

16 And so that forces us to exploit
17 the remaining variation, which often only
18 occurs in the post period; right?

19 So, I'm telling you these years,
20 '23 and '24, right, turn out to be precious
21 that we don't have any other source of
22 variation in the conduct to assess. Right?

23 So, I'm extremely loathe to get
24 rid of the few sources of data that would
25 allow us to estimate the effect.

1 not to adopt a policy like a higher minimum
2 wage policy in which each state is making
3 independent decisions.

4 This is whether or not to be a
5 member of a cartel and the cartel formed in
6 2002 and it ran to 2023.

7 So the exposure to the
8 treatment, exposure to the cartel, the cartel
9 was a constant. It didn't vary across
10 schools and didn't vary across years.

11 Q. Did the consensus methodology
12 vary across years?

13 A. I think that there were
14 refinements to the CM over time.

15 But that doesn't change how I
16 would design the zero one decision to just
17 one conspiracy. There's not a series of
18 independent serially stacked up conspiracies
19 here.

20 Q. Okay. And if we go to your
21 rebuttal report, Singer-2 at Footnote 218,
22 really starting at 216 through 218 which is
23 on Page 62.

24 And you also quote in the text.

25 A. Yes. I'm here.

1 The treatment is the exposure to
2 the conduct, which is a 20-year long price
3 fixing conspiracy; right?

4 And within a year, within a
5 given year, again, these firms aren't making,
6 you know, decisions about whether or not the
7 conduct -- the cartel exists. The cartel
8 exists regardless of whether or not one
9 person defects in a given year. The cartel
10 is the cartel.

11 Q. How does your model adjust for
12 staggered entry and exit into the 568 Group?

13 A. My model, so, I don't do a
14 staggered diff and diff or DID the way that
15 Dr. Hill does.

16 So my model treats you as a one
17 or a zero, depending on whether or not you
18 were alleged to have participated in the
19 cartel in that year; right?

20 In contrast, for the staggered
21 different difference, as Dr. Hill
22 acknowledges in his report, if you have
23 someone like Yale, who starts off say outside
24 of the conduct, comes in and then leaves,
25 right, he has to eliminate Yale's post 2008

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1 experience from his model, right. Under
2 staggered treatment you use the post 2008
3 Yale experience, which I got to tell you is
4 probably one of the most important
5 experiences we can investigate in the
6 entirety of the data set.

7 Dr. Hill's technique eviscerates
8 it. It eliminates Yale post 2008.

9 So, if I -- if you understand
10 kind of the hand that you're dealt, where you
11 can find variation in the data and you
12 recognize the downside of the staggered DID,
13 you would hopefully quickly come to the
14 conclusion that this is too important. This
15 data that he's eliminating from the
16 regression is just too important to get rid
17 of.

18 And yet he does. So for me, I,
19 you know, we considered it and we decided to
20 treat, you know, in and out of the conduct as
21 one in zero regardless of whether or not you
22 had been there. If you were there and you
23 left, you know, you get -- you continue to
24 stay in the database and you continue to
25 inform the conduct coefficient.

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1 financial aid. We didn't want to include
2 those who had free rides.

3 Q. Because those are not in the
4 class?

5 A. Correct.

6 Q. Weren't students who received a
7 full ride subject to the same challenged
8 conduct as the potential class members?

9 A. Sure.

10 Q. So, why should the definition of
11 the class determine whether or not -- let me
12 ask you this: You would agree with me that
13 the people, the students who got 95 percent
14 or more of the cost of attendance are the
15 individuals for whom defendants were most
16 generous towards with their financial aid;
17 correct?

18 A. Sure.

19 Q. So, in your regression models,
20 you exclude observations from the very
21 individuals from whom defendants were most
22 generous to; correct?

23 A. Yes. Because they are not
24 members of the class.

25 So, what we want to do is build

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1 That's what this exclusion is
2 doing in this footnote. We're not treating
3 Yale any differently. If a student got a
4 full ride at Yale, he or she would be out of
5 the database.

6 Q. But your regression does include
7 nonclass members at Yale, many nonclass
8 members; correct?

9 A. I don't know if it's many.

10 Q. Well, it's like eight years'
11 worth of students, at least two full
12 graduating classes; correct?

13 A. When you say eight years, you're
14 talking about the run from 2008 to 2016?

15 Q. Right. If you were in the -- if
16 you were started at Yale between 2009 and
17 2012, you're not a class member?

18 A. Correct.

19 Q. Okay. So, that's a lot of years
20 in which you are considering Yale students in
21 your regression models who are not class
22 members; correct?

23 A. That is correct, but that's not
24 the criteria for getting in. The criteria
25 for getting into the sample was whether

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1 you're a full ride tuition -- full ride
2 tuition or not. If you were full ride, you
3 were taken out by that exclusion there. It
4 wasn't whether or not you were subjected
5 conduct.

6 It was just if you were a full
7 ride. That's all this threshold is doing.

8 Q. Okay. Can you think of -- so,
9 and the only reason you excluded the full
10 ride people is because they are not in the
11 plaintiff's proposed class?

12 A. Correct.

13 Q. And as a matter of economics,
14 you don't believe it useful to assess the
15 impact of the challenged conduct on those
16 students for whom the defendants were most
17 generous?

18 MR. CRAMER: Objection to form.

19 THE WITNESS: I don't think it's
20 useful. I didn't do, neither did Dr. Hill,
21 which is interesting, nor did Dr. Stiroh. I
22 think if someone was interested in exploring
23 whether nonclass members were injured or
24 benefited from the conduct, that would be
25 interesting as an academic inquiry. I don't

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1 free ride as a sophomore, but had paid
2 something as a freshman, there would be a
3 decrease in effective institutional price for
4 that student. Is that right?

5 A. If you included them in the
6 database in that second year, yes. And you
7 only computed EIP for that student, you'd see
8 a decrease, a decrease in EIP, yes.

9 Q. And so if a student received
10 paid in year one and received a free ride in
11 year two, you would include the year one
12 observation but exclude the year two
13 observation; correct?

14 A. I think through this exclusion,
15 I think I'd want to go back and check, but
16 through this exclusion, I think that we're
17 taking out any one in any year who got the
18 full ride tuition.

19 Q. How does that choice not bias
20 your results because you're excluding someone
21 who in a particular year he got a free ride?

22 MR. CRAMER: Objection to form.

23 THE WITNESS: This may never
24 happen, right, in the database.

25 But because my understanding is

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1 that the schools tend to be most generous in
2 the first year and then their generosity
3 declines over time. But you're asking me,
4 hypothetically, could it happen? I don't
5 know if it's ever happened.

6 BY MR. GRINGER:

7 Q. Okay. But just -- I understand
8 you may not know whether or not it happened.
9 That wasn't my question. I take it your
10 testimony is you don't actually know whether
11 or not that has occurred?

12 MR. CRAMER: Objection. Form.
13 Asked and answered.

14 THE WITNESS: From my
15 understanding, it would tend not to occur.
16 They go in the opposite direction. They get
17 less generous over time.

18 BY MR. GRINGER:

19 Q. What's your basis for saying
20 that the schools get less generous over time?

21 A. I think I have a cite.

22 Q. I think I saw you say that. I
23 didn't see any cite.

24 Sitting here today, can you tell
25 me the basis for your statement that the

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1 THE WITNESS: I wouldn't put it
2 that way. It's not requiring it. Because it
3 could find no effect.

4 The way that you put the
5 question, it almost sounds as if there has to
6 be an effect.

7 BY MR. GRINGER:

8 Q. No.

9 A. It's just testing for a single
10 uniform effect.

11 Q. So, just so -- because I'm
12 screwing up.

13 Your EIP regression model is
14 testing for a single uniform effect. Is that
15 correct?

16 A. It's testing for a single
17 uniform effect because one of the nature of
18 the challenged conduct which you and I don't
19 get to write, but two, we don't have an a
20 priori basis in the record for why the effect
21 would vary from one year to the next.

22 The mere fact that one of 17
23 schools peeled out, you know, in the middle
24 of a period would not materially alter the
25 efficacy of the alleged cartel. I mean

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1 either the cartel is inflating prices or it's
2 not. And when one of 17 goes out or two of
3 17 goes out in a given year, that doesn't
4 give you an a priori reason in economics to
5 believe that the cartel would all of a sudden
6 unravel and the effects would go to zero.
7 Right?

8 You would need substantial
9 defection in order to achieve an unraveling
10 of the cartel. We never get anywhere close
11 to that.

12 That's the quibble that I'm
13 having with Dr. Stiroh. You need an a priori
14 reason to test for break. If you don't have
15 an a priori reason, you have one conduct
16 coefficient. It's just that simple.

17 Q. And in your EIP regression model
18 tests for the alleged impact of the
19 challenged conduct to be constant across the
20 individual schools; right?

21 MR. CRAMER: Objection. Form.

22 THE WITNESS: Well, it's
23 estimating the effect of one uniform
24 coefficient across all schools across all
25 time periods.

1 Again, I said that when we go
2 and use our in-sample prediction techniques,
3 we generate differential effects, right, by
4 defendant in that table. We get differential
5 effects.

6 Q. What are institution fixed
7 effects?

8 A. An institution fixed effect is a
9 dummy variable that will control for the
10 identity of the institution when making the
11 prediction of what the EIP or the EFC was in
12 any given year.

13 Q. Do you use institution fixed
14 effects in your regression models?

15 A. I think that we have some
16 combination of institution student fixed
17 effects. We can go back and look in the
18 summary tables where we show the regression
19 coefficients. We define how we've
20 constructed the student fixed effects.

21 Q. I will concede you do that.

22 A. Okay.

23 Q. My question was just a
24 stand-alone institution fixed effect.

25 A. I think that if you added those

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1 MR. GRINGER: Would now be a
2 good time for a break?

3 THE WITNESS: Sure.

4 THE VIDEOGRAPHER: The time is
5 3:15. Now going off the record.

6 - - -

7 (Whereupon, there was a recess.)

8 - - -

9 THE VIDEOGRAPHER: We are back
10 on the record. 3:39.

11 BY MR. GRINGER:

12 Q. Dr. Singer, you also alluded to
13 a couple of times today what you call a harm
14 done by net analysis.

15 A. Harmed on net.

16 Q. Harmed on net. I'm sorry. I
17 have it both ways in my outline here. Harmed
18 on net.

19 What is the purpose of your
20 harmed on net analysis?

21 A. Right. So, I offered initially
22 in my Singer-1, I offered a harmed at least
23 once standard, and Dr. Stiroh's critique was
24 that even under the hypothesis of no effect,
25 you would get to a high harmed on net with

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1 four shots at the apple, four bites at the
2 apple.

3 MR. CRAMER: Harmed at least
4 once, I think you meant to say.

5 THE WITNESS: Sorry. Harmed at
6 least once. Yes.

7 I said well, that's not a good
8 critique because if we had gotten no effect,
9 we would have stopped at stage one. Even
10 ignoring that, let's consider an alternative
11 metric or measure of injury, which is harmed
12 on net across all of your observations in the
13 data.

14 That's where the harmed on net
15 came from.

16 It was a -- it was offered as a
17 rejoinder to Dr. Stiroh's critique if aimed
18 at my harmed at least once standard.

19 BY MR. GRINGER:

20 Q. Do your harmed on net and harmed
21 at least once analyses give the same results
22 for singletons?

23 A. Yes. So, under the student
24 fixed effect variety, for singletons, yes,
25 the singletons are going to be suffered

1 can be vastly different, in fact, it could
2 even be zero in a given year.

3 The prediction for a given year
4 is not constrained in any way.

5 Q. Not only that, the prediction
6 can be and often is negative; correct?

7 A. You could have -- you could have
8 a, when you say negative, I want to make sure
9 that the predicted price comes in above the
10 actual price. That could happen; right?

11 Even with, we should give a name
12 for these people, the never -- we should come
13 up with a name, this is different than the
14 singletons. These are people who only
15 purchase while their school is a member of
16 the cartel. The -- I don't know what you
17 want to call it.

18 Q. If you think of something, get
19 back to us.

20 So, would it be and what we
21 just -- that average effect across the number
22 of years is true regardless of the individual
23 characteristics of the student; correct?

24 A. The average across the four
25 years will be the same, right.

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1 And so, you know, you know my
2 response to this. I think I these -- these
3 class members, the ones that are unfortunate
4 enough to have actually matriculated four
5 years under the cartel, that is, their school
6 was a member of the cartel, each of the four
7 years I think these are the most vulnerable
8 students, the most likely to be injured given
9 the generalized effect that we already know.

10 So, we're faced with this issue
11 of should we remove them from the test, which
12 Dr. Stiroh never does, but that's her
13 implication, but I strongly would reject
14 taking them out because my inclination is to
15 give the fact finder my best estimate of the
16 share of the class members who are injured
17 under a given standard.

18 But having said that, we said
19 fine, if you want to do a test purely on
20 students who don't fall under the singleton
21 category or about the only cartel, we'll come
22 up with a name for them, they are only
23 purchasing while they are sellers in the
24 cartel. I've got another test, that's the
25 Yale test and that's in Singer-3.

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1 Q. I'm sorry.

2 A. Do you mind reading it back?

3 There were a lot of nuances there.

4 Q. Without agreeing with that, my
5 question is: Is there any way in which your
6 harmed-on-net analysis could identify an
7 individual class member who was not impacted
8 by the challenged conduct if that class
9 member attended a defendant school and during
10 the period they attended, their school was a
11 member of the 568 Group each year they
12 attended?

13 MR. CRAMER: Asked and answered.

14 THE WITNESS: Yeah. So, it's
15 the -- just to be careful, it's the --
16 there's nothing wrong on the harmed-on-net
17 standard. The difficulty here is that we
18 have class members who purchased only in the
19 years in which a defendant was a member of
20 the alleged cartel; right? That's the
21 challenge.

22 And the third interactions with
23 student fixed effect.

24 So, it's -- it's not the
25 harmed-on-net standard, the way that you put

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1 the question is wouldn't your harmed-on-net
2 always do this? There's nothing wrong with
3 harmed-on-net. That's a metric of injury;
4 right?

5 The challenge that we have here
6 is the use of student fixed effects combined
7 with class members who matriculated only
8 while their defendant was a member of the
9 cartel.

10 And so long as we use the
11 student fixed effect and I will grant you
12 that those students will be shown to be
13 harmed on average, I also insist that if you
14 ask me to give the best prediction of what
15 that student would have paid in a but-for
16 world, I would do the precise -- I would do
17 the precise thing that I did, which is I'd
18 take the best model that I had, which is
19 specification six, and I would project what
20 that student would have paid in a but-for
21 world and I would compare it to what he paid
22 in the actual world.

23 That is the best that
24 econometrics can do for that.

25 The final thing is that if

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1 you -- if you're not satisfied with that
2 answer, I offer the Yale test in Singer-3,
3 which removes all students who matriculated
4 only during years, right, it gets around this
5 problem that Dr. Stiroh has identified,
6 matriculated during years, the only people on
7 the Yale experiment is people who
8 matriculated some in the clean, some in the
9 dirty and some in the clean.

10 Q. Dr. Singer, this is an important
11 case to my clients and the clients who are
12 continuing to litigate. I'd ask you not to
13 waste our time with these nonresponsive
14 answers. I didn't ask you to defend what we
15 did. I asked you to answer my question.

16 I think the answer was yes, but
17 in fact --

18 A. That wasn't my answer. You
19 heard my answer. I gave you a full, detailed
20 answer. I'm not going to give it to you
21 again. Move on. Let's move on to the next
22 question.

23 Q. I asked the question --

24 A. And I also, what is this I'm
25 not -- we're not serious? Was I joking in

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1 (Whereupon, Deposition Exhibit
2 Singer-9, Surrebuttal Expert Report of Lauren
3 J. Stiroh, Ph.D., was marked for
4 identification.)

5 - - -

6 BY MR. GRINGER:

7 Q. If you could turn to Page 14,
8 Singer-9, 3.86.

9 This is an actual Cornell
10 student in your data, Dr. Singer.

11 And this student ostensibly is
12 overcharged by \$1,282 in year one, \$4,030 in
13 year two, undercharged by \$9,487 in year
14 three and was harmed by \$8,983 in year four.

15 What could explain the switch
16 from a \$4,030 overcharge in year two to a
17 \$9,487 undercharge in year three?

18 A. Yeah. It's easy. He got --
19 this student, I don't know if it's a man or a
20 woman, but if you look at the actual EIP in
21 Column D, they got a remarkably low EIP. And
22 it's so low that I priced the regression.
23 The regression can't explain why it was so
24 low.

25 So, when I go to predict what

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1 this person would have paid, my prediction is
2 above the actual EIP in that third year. My
3 prediction, the best prediction I can make,
4 given all the characteristics of that
5 student, is that that student's EIP in year
6 three would have been 17,226.

7 But in fact, they got this
8 remarkably low EIP of 7,739.

9 So, I cannot show injury under
10 this method in year three.

11 Q. What could explain the switch
12 from the \$4,030 overcharge in year two to the
13 \$9,487 undercharge in year three?

14 MR. CRAMER: Asked and answered.
15 He just answered that question.

16 THE WITNESS: I mean I can do it
17 again.

18 I think maybe you're asking now
19 why didn't that happen in the previous year?

20 MR. GRINGER: Okay.

21 THE WITNESS: I can answer it --
22 let me just say it. It's okay.

23 Look at the price in the
24 previous year. I mean you're going to see a
25 pattern.

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1 Here the price shot up from
2 their initial EIP, their initial EIP was
3 14,000. Do you see that?

4 It goes up to 19,000 in year
5 two. And the regression predicts, the
6 prediction model, right, my best-fitting
7 model, model six, right, is that this student
8 would have paid in year two an EIP of 15,501;
9 right?

10 And, therefore, they suffered an
11 overcharge of \$4,000; right?

12 But I don't want you to look at
13 the 4,000 and the minus 9,000 and think
14 there's some infirmity with the prediction.

15 The model just could not have
16 predicted that this student would have gone
17 from 14 to 19 to 7,000 in an EIP.

18 These are the examples I'm
19 talking about before where these very large
20 discounts manifest. The model could not have
21 predicted them and the model will consider
22 the student to be uninjured in those years.

23 Despite the fact that whatever
24 shock gave that low price, likely that same
25 shock would have occurred in the but-for

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1 world, but we're not crediting the student
2 for that. We're just going to assume that
3 that shock was associated entirely with the
4 conduct; right?

5 We're going to take that out and
6 the model, the model can't predict it; right?

7 BY MR. GRINGER:

8 Q. Do you have any idea what
9 Cornell did in year three for this student
10 that was better for the student?

11 A. We'd have to go into the
12 individual database to look to see what
13 happened.

14 But I have to accept that those
15 are the actual EIPs according to the data.

16 Q. Even with these data swings from
17 14 to 19 to 7 to 25, this student's total
18 overcharge just happened to equal exactly
19 \$4,808. That doesn't strike you as a
20 coincidence?

21 A. It is not a coincidence. It is
22 happening because of the student fixed
23 effects that we're using. This would not
24 happen had we not used student fixed effects.

25 This is a -- this is an artifact

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1 of two things, I'm telling you. The use of
2 the student fixed effects, which I think is
3 the best model that we can use.

4 When you look at the R squared,
5 among other factors, but if you look at the R
6 squares as we move across the bottom of the
7 row, we get much, much better predictive
8 power with the student fixed effects than we
9 do without, right.

10 I want to come up with the best
11 prediction model possible.

12 This is entirely an artifact of
13 the use of fixed effects, student fixed
14 effects combined with students who were
15 unfortunate to have just matriculated while
16 their school was part of the cartel.

17 Q. Do you dispute that 26 percent
18 of proposed class members were, according to
19 your methodology, overcharged by more than
20 \$5,000 in at least one year and undercharged
21 by more than \$5,000 in at least one other
22 year?

23 MR. CRAMER: Objection to form.

24 THE WITNESS: I've never seen or
25 heard that stat before. You're asking me to

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1 them opportunities to be injured, you know,
2 in the years where they were in the conduct,
3 when Yale was in the conduct.

4 If you start with 81 on a per
5 transaction basis, you're going to get up
6 into the high 90s for all students in the
7 class who got four year opportunities; on the
8 harmed at least once standard.

9 Q. Did you perform your in-sample
10 prediction method using the results of your
11 alternative overcharge model specification
12 that does not use student fixed effects?

13 A. I did not -- well, it may have
14 been performed. I don't know if it was
15 performed, but I certainly didn't offer it up
16 as a measure of impact.

17 Q. Why not?

18 A. I think I told you that when
19 I -- when -- we could go to the results or I
20 could just tell you that we get drastically
21 better results in terms of goodness of fit of
22 the model as we move rightward across the
23 specifications.

24 So, I wanted to offer up the
25 in-sample metric based on what I thought was

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1 the best model.

2 And method, you know,
3 specification six is my preferred model.

4 I continue to use student fixed
5 effects even when I do the Yale regression.
6 I continue to do student fixed effects. But
7 just for those students who experience the
8 switch by Yale in the 2008 period.

9 Q. Okay. Do you still have
10 Singer-9 in front of you?

11 A. Yes.

12 Q. Page earlier, footnote 53. Do
13 you dispute Dr. Stiroh's finding that when
14 you apply your harmed-on-net analysis to your
15 EIP specification, that uses only school
16 fixed effects rather than school and student
17 fixed effects that only half of proposed
18 class members are flagged as harmed?

19 A. Do I dispute it? I don't know
20 what the answer is. I can't dispute it.

21 Q. Is the only difference between
22 model three and model six in your EIP
23 regression analysis the inclusion of student
24 fixed effects?

25 A. I believe so.

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1 Q. Okay.

2 A. And I could -- I just happen to
3 have the page here.

4 Q. Please.

5 A. Let me just confirm.

6 Q. Please confirm.

7 A. Yes. That's the only
8 difference.

9 Q. Now we've been talking all about
10 EIPs. And you've built a regression model to
11 analyze the challenged conducts impact on
12 EIPs; correct?

13 A. Correct.

14 Q. And you define EIP as the cost
15 of attendance minus institutional grant aid;
16 correct?

17 A. Correct.

18 Q. EIP is a measure you came up
19 with; correct?

20 A. It is a measure I came up with,
21 but it's based off of a much more commonly
22 known net price measure.

23 The reason, as I explained in my
24 report, I didn't want to use net price is
25 that net price subtracts out aid from other

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1 sources.

2 And I felt like including that
3 into the dependent variable would create a
4 source of confusion and would confound what
5 we're looking for.

6 And I'm fairly confident that
7 Dr. Hill uses the same measure of pricing
8 that I do as well.

9 Q. Your EIP metric does not include
10 work study awards; correct?

11 A. I don't think the base version
12 of my EIP model uses work study. It's
13 subtracting out institutional grant aid.

14 Q. Why does your definition of EIP
15 not include work study awards?

16 A. Because the theory of harm here
17 is that the defendants coordinated in their
18 decisions of how much to offer in terms of
19 grant aid.

20 So, if we included other
21 measures of aid that were outside of what I
22 think the scope of the challenged conduct is,
23 I don't think there's a theory of harm that
24 says that this inflated work study or
25 deflated work study. Now they may have gone

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1 MR. CRAMER: There are a lot of
2 class members in here.

3 MR. GRINGER: Could you stop it?

4 MR. CRAMER: It was a joke.

5 MR. GRINGER: First of all, i
6 did receive financial aid from Penn which is
7 more than certain people and their children
8 can say. Okay?

9 BY MR. GRINGER:

10 Q. So, you don't know, and we can
11 come back to that, Dr. Singer.

12 But just so the record is clear,
13 if a student received \$50,000 in grant aid
14 and the \$2,000 work study award and the cost
15 of attendance was \$80,000, the student would
16 pay to the school \$28,000; correct?

17 MR. CRAMER: Asked and answered.

18 THE WITNESS: That sounds right.

19 BY MR. GRINGER:

20 Q. But you would treat the EIP as
21 \$30,000; correct?

22 A. Correct.

23 Q. So you're personally inflating
24 your measure of the EIP inflates what every
25 single potential class member actually paid

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1 to their institution; correct?

2 MR. CRAMER: Objection to form.

3 THE WITNESS: No. That's way
4 too much of a stretch. Did you mean to say
5 every single? Maybe -- I think maybe what
6 you meant to say was for those who got work
7 study assistance.

8 BY MR. GRINGER:

9 Q. That's fair. Your measure of
10 EIP inflates for every student who received
11 work study assistance what they actually paid
12 to a defendant?

13 A. It -- I'm going to push back
14 gently on that it inflates.

15 I'm trying to capture out of
16 pocket no strings attached. I think that
17 I've come up with the best measure of that.

18 You know, I note that none of
19 your experts have said that Dr. Singer should
20 include work study as -- in his EIP. This is
21 the first time I'm hearing this critique.
22 But having heard it now for the first time, I
23 think that my measure is still superior. I
24 like mine better.

25 Q. EIP also does not include

1 subsidized loans; correct?

2 A. It does not include subsidized
3 loans.

4 Q. You don't think the opportunity
5 to obtain a subsidized loan is a benefit
6 offered to students?

7 A. Oh, no, not if it's coming in
8 lieu of an unconditional grant. You'd always
9 prefer a grant over a loan. My goodness.
10 These students, I know you think they should
11 be thankful, but they don't like coming out
12 of college in debt up to their eyeballs.

13 Q. Let me ask you: You're assuming
14 that the choice is between a subsidized loan
15 and more grant money. If the choice is
16 between a subsidized loan and nothing, a
17 student prefers a subsidized loan; correct?

18 A. If that's the choice, I don't
19 think that that -- I don't think that that is
20 the outcome, though, in the but-for world. I
21 think that what's happening is that the
22 defendants were able to drive a harder
23 bargain and push more loans than they
24 otherwise would have been able to.

25 Q. Okay. And what percentage of

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1 aid -- you've reviewed many documents in this
2 case or at least many documents are cited in
3 your reports; correct?

4 A. Correct.

5 Q. How many of those documents
6 referenced your concept of EIP?

7 A. Well, I don't know if there is
8 a -- if there's a document that defines EIP
9 as I've defined it.

10 I've cited published, you know,
11 economics studies and other statutory
12 language over a net price. And mine is a
13 derivative of a net price and I've now told
14 you that I don't want to include scholarships
15 and funding from other sources in my price
16 measure because that would conflate and
17 confound the effect of the alleged
18 conspiracy.

19 Q. You didn't -- are there any
20 benefits to a family who receives a
21 subsidized loan as part of their financial
22 aid package?

23 MR. CRAMER: Objection to form.

24 THE WITNESS: I would say it
25 depends on relative to what? If it was -- if

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1 it came about because of a conspiracy to
2 suppress grant aid, then they would be
3 unequivocally worse off.

4 BY MR. GRINGER:

5 Q. What if it -- just putting aside
6 no -- I'm not looking compared to what. Is
7 there any benefit to a family if being able
8 to obtain a subsidized loan as part of their
9 financial aid package?

10 MR. CRAMER: Asked and answered.

11 THE WITNESS: You could
12 construct a fact pattern under which a
13 subsidized loan is better than having to
14 borrow at prevailing commercial rates.

15 BY MR. GRINGER:

16 Q. Many student loans are forgiven.
17 Are you aware of that?

18 A. I understand it can happen, yes.

19 Q. Did you go back and recalculate
20 EIP for potential class members though had
21 their student loan forgiven?

22 A. No.

23 Q. You don't consider a Pell grant
24 and other federal grants in your EIP
25 calculation; correct?

1 A. Correct.

2 Q. Why not?

3 A. For the reason I told you. If
4 it's coming from third parties, then it's
5 going to conflate the measure of our
6 dependent variable in particular, it's going
7 to inject components that are not under the
8 control of the defendant institutions.

9 Q. But nonetheless, any outside
10 scholarship or Pell grant a student might
11 receive, might have lowered the net price
12 that they paid to attend a defendant
13 institution; correct?

14 A. It may have lowered it relative
15 to the actual world but relative to the
16 but-for world. It can't compensate for the
17 injury that the class members suffered as a
18 result of this cartel.

19 Q. Why not?

20 A. Oh, because that's easy.
21 Because they would have continued to get,
22 presumably they would have gotten the same
23 funding from third parties in the but-for
24 world.

25 The only thing that would change

1 into consideration when they are making their
2 grant aid decisions.

3 Q. But do you have an actual
4 understanding of what happens?

5 A. I don't think I have a good
6 enough understanding to explain it to you
7 right now.

8 I would submit that at least in
9 our student fixed effect models, if those
10 Pell grants are constant over time, they
11 would be controlled for with the student
12 fixed effects.

13 Q. Do you know if Pell grants are
14 constant over time?

15 A. I don't know that if every case
16 they are constant.

17 Q. Do you know if in any case they
18 are constant?

19 A. No, but I think a reasonable
20 surmise is that if you got a grant such as a
21 Pell grant, that the amount would be the same
22 in every year that you're in the database.

23 Q. Do you know of any higher
24 education institution that uses EIP?

25 A. Well, they are all using it

1 implicitly, right, because they are all
2 trying to figure out how to bridge the gap
3 between the list price and the various
4 payers. I didn't say that well. But they
5 are trying to figure out how the various
6 payers can get up to the list price and one
7 component would be the EFC. Another
8 component would be the loans. The third
9 component would be the grant aid.

10 And so, you know, that formula
11 incorporates and embeds what I've defined as
12 the EIP.

13 So they are all implicitly using
14 it.

15 Q. What about explicitly? Do you
16 know of any school that explicitly uses the
17 EIP?

18 A. I don't know if they write out
19 EIP as a separate formula and model it the
20 way that I have.

21 Q. We talked earlier today about
22 the principle of horizontal equity.

23 A. Uh-huh.

24 Q. One possibility is that schools
25 that adhere to that principle make more

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1 answer. We can go through all of these. I
2 don't think that sitting here certainly I
3 can't give you a specific change to the
4 formula that CalTech or any defendant made
5 upon joining. I get to see the offers of
6 EFC. I don't get go see the actual formula
7 itself.

8 Q. Your -- we were talking a moment
9 ago about your common shock analysis.

10 By itself, that's not enough to
11 show common impact; correct?

12 MR. CRAMER: Objection to form.

13 THE WITNESS: I think that
14 whether it's in sample -- remember, there's
15 two parts of the proof. Okay?

16 You have to first show a
17 generalized effect and in my case I'm doing
18 it with my regression model.

19 And then at part two, you can go
20 in different directions. You could go the
21 price structure direction, you can go in
22 sample prediction and you can go horizontal
23 and vertical equity.

24 The common shock was meant to
25 corroborate the price structure path. I'm

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1 going to agree, it was a great question --
2 she should write more of them -- that by
3 itself, that would not constitute a proof of
4 common impact. Just like in sample by
5 itself.

6 These are all, it's a two-step
7 process. You have to pair part two, whether
8 it's the pricing structure, in sample
9 prediction or horizontal vertical equity you
10 have to pair that with a finding of the
11 generalized effect. If you don't have a
12 generalized effect, you don't get -- you
13 don't get passing. You're over. That's the
14 first box. Only if you get to the second.
15 The question kind of presumes that some of
16 these ancillary or second stage techniques
17 could by themselves count as a sufficient
18 proof of common impact. I just want to make
19 sure we're all on the same page. None of
20 them by themselves can do it.

21 They have to be married up with
22 the first stage regression.

23 BY MR. GRINGER:

24 Q. Are you aware that many
25 potential class members received financial

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1 summaries on what's in the yellow book by
2 staff. I turn it into prose for the
3 declaration. I speak with my staff about
4 their understanding of what they saw in the
5 yellow books.

6 Q. Did you review any of the
7 documents in this case?

8 A. Yes.

9 Q. How many?

10 A. I don't have a count for you,
11 but there are documents.

12 Q. How did you choose which
13 documents to review personally?

14 A. I think that the way that the
15 documents come about, I mean first of all we
16 have access, of course, to everything that
17 gets produced and we had it broken down by
18 defendant.

19 But we're not just going into
20 the documents and just reading. We're
21 looking for particular things. If we're
22 defining markets, I'm looking at peers. I'm
23 looking for key word search for the word
24 peers to find markets.

25 So, we come up with an outline.

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1 I come up with an outline with my team as to
2 what the report is going to cover. And then
3 the team goes looking for data and documents
4 that would inform the various inquiries that
5 we're trying to make.

6 Q. Do you go look for documents
7 that are -- that contradict your opinions?

8 A. We don't go look for them, but
9 sometimes we find them.

10 Q. Your assessment of the
11 qualitative evidence in this case is
12 important to your opinions; correct?

13 A. It is important. It's a one --
14 it's one prong. It's one pillar that one
15 needs to look at when forming hypotheses and
16 rendering opinions.

17 I think that doctor, at least
18 Dr. Hill agrees with me on this regard. I
19 got the sense that Dr. Stiroh doesn't think
20 qualitative evidence is informative.

21 But Dr. Hill I think would agree
22 with me that you want to look at both the
23 record evidence and the data.

24 Q. What did you do make sure you
25 were getting a complete picture of the

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1 Group specific surveys there were?

2 MR. CRAMER: Objection to form.

3 THE WITNESS: No, I don't.

4 BY MR. GRINGER:

5 Q. What is your understanding of
6 the requirements to be a member of the 568
7 Group?

8 A. Well, I think at a very large
9 level, to be a member in good standing you
10 would abide by the various consensus
11 methodologies. I think that when we see
12 people leaving who don't want to abide by it
13 any longer tells me that these two aren't
14 compatible. You either have to abide by the
15 common methodology or you can't be a member.

16 Q. Did you review the testimony
17 from numerous individuals in this case that
18 said the only requirement to be a member of
19 the 568 Group was to be need blind?

20 MR. CRAMER: Objection to form.

21 THE WITNESS: I don't recall
22 that specific testimony, but it seems
23 inconsistent with why would Yale have to
24 leave the group?

25 BY MR. GRINGER:

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1 Q. And Michigan is higher than
2 Vanderbilt; correct?

3 A. Correct.

4 Q. And Virginia is higher than
5 Vanderbilt; correct?

6 A. Correct.

7 Q. And UCLA, UC Berkeley and
8 Michigan are higher than ivy league school
9 Dartmouth; correct?

10 A. Slow down. Give me -- give it
11 to me again.

12 Q. UCLA, UC Berkeley and Michigan
13 are all higher than ivy league school
14 Dartmouth; correct?

15 A. Yes.

16 Q. Your own revealed preference
17 rankings actually strongly support including
18 flagship public universities in your relevant
19 market; correct?

20 MR. CRAMER: Objection to form.

21 THE WITNESS: No.

22 BY MR. GRINGER:

23 Q. Why not?

24 A. You're confusing the purpose of
25 the test. What we want to see is when we

1 start with a set of -- we start with the
2 defendants and we start layering on
3 additional schools. The test is to see
4 whether the preference rankings of the
5 defendants move down materially and they
6 don't; right?

7 And we confirm that when we do
8 it, when we add the ten highly ranked -- ten
9 more highly ranked university, when we add
10 the ten liberal arts schools or we add both.
11 That was the purpose of the test.

12 Q. You pointed to the test in
13 response to my question about close
14 competitors. Maybe you didn't do an analysis
15 of how close the competitors are?

16 MR. CRAMER: Objection to form.

17 THE WITNESS: I did do an
18 analysis of how close the competitors are.
19 It shows that when you begin with the
20 defendant's ranking and you add in these
21 candidates, you don't reduce the revealed
22 preference of the defendants. And that tells
23 me that you've -- this is consistent with the
24 defendants constituting their own relevant
25 market.

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1 Q. I count documents from Duke as
2 one, CalTech as two, Columbia as three,
3 Cornell as four, Dartmouth as five, Emory as
4 six, Georgetown is seven and Johns Hopkins is
5 eight; correct?

6 MR. CRAMER: What's the
7 question?

8 MR. GRINGER: Do you agree --
9 correct?

10 MR. CRAMER: What's correct?
11 What's the question?

12 MR. GRINGER: What I just
13 counted.

14 THE WITNESS: His counting was
15 correct.

16 MR. GRINGER: Thank you.

17 MR. CRAMER: I'm not sure what
18 the question was.

19 THE WITNESS: I think he wanted
20 to know the unique number of documents or
21 schools that I -- for which I could find --

22 MR. CRAMER: In this section.

23 THE WITNESS: Yes. It's eight.

24 BY MR. GRINGER:

25 Q. So that means for half of the

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1 schools in the 568 Group you did not cite a
2 single document in this section; correct?

3 A. Oh, in this section I grant you,
4 but I cite documents elsewhere.

5 Q. Can I have Tab 84, please, which
6 we'll mark as 17.

7 - - -

8 (Whereupon, Deposition Exhibit
9 Singer-17, Email Chain, was marked for
10 identification.)

11 - - -

12 BY MR. GRINGER:

13 Q. Singer-17 is a multi-page
14 document with a Bates number beginning with
15 ND_0158341.

16 Dr. Singer, if you could take a
17 look at the email from Paul Mueller to Thomas
18 Bear and Robert Mundy.

19 A. Should I read from the bottom
20 up? Does it go in the reverse order?

21 Q. I'm asking you about
22 Mr. Mueller's email right now. I'm just
23 asking you about the top email. The others
24 are different subjects.

25 A. Let me read the top one. I've

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1 read the October 3rd email from Paul Mueller.

2 Did you want me to read anything else?

3 Q. No. Have you seen this email

4 before?

5 A. I don't recall seeing it.

6 Q. Could I have Tab 85 which we'll
7 mark as Singer-18.

8 Dr. Singer, Singer-18 is a
9 multi-page document with a Bates number
10 beginning with Emory_568 lit_0058886.

11 - - -

12 (Whereupon, Deposition Exhibit
13 Singer-18, Notes of questions from President
14 Wagner regarding financial aid and
15 undergraduate admissions competitiveness
16 dated September 7th, 2014, was marked for
17 identification.)

18 - - -

19 BY MR. GRINGER:

20 Q. Dr. Singer, do you see there are
21 a series of questions, question two is what
22 are the top three to six schools to whom we
23 most frequently lose admitted students?

24 A. Yes.

25 Q. Do you see listed are eight

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1 schools?

2 A. Yes.

3 Q. This is talking about Emory.

4 Of those eight schools, five of
5 them are outside of your proposed relevant
6 market; correct?

7 A. Correct.

8 Q. It says note the significant
9 presence of public universities here;
10 correct?

11 A. Yes.

12 Q. Did you consider this document
13 in forming your opinions on the relevant
14 market in this case?

15 A. I did not consider it. And
16 having seen it, it wouldn't change my
17 opinion.

18 Q. Can I have Tab 216, please.
19 This will be Singer-19. Singer-19 is a
20 multi-page document with a Bates number
21 beginning with Penn 568-lit-00089925.

22 - - -

23 (Whereupon, Deposition Exhibit
24 Singer-19, Penn All Staff Retreat dated May
25 28, 2013, was marked for identification.)

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1 below do you want me to go? Down there. I'm
2 sorry. I thought we were still in the
3 figure.

4 Top competitors.

5 Q. Yeah. On average, they win
6 students from Penn 95 percent of the time.

7 Do you see that?

8 A. Yes.

9 Q. So, is it your interpretation
10 from this document is that those schools are
11 Penn's closest competitors even though they
12 win students from Penn 95 percent of the
13 time?

14 A. I think Penn by using the word
15 top competitors I think is a fair inference
16 that they consider those to be competitors.

17 Q. Aren't those inferences for the
18 fact finder, not for you?

19 A. I --

20 Q. I'm sorry. You make a lot of
21 inferences about what documents mean; don't
22 you? You got into trouble with that before?

23 MR. CRAMER: Objection to form.
24 Would you like him to answer the first
25 question you asked or the second? Are you

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1 the schools included in the relevant market
2 which I think is \$980,000 per student.

3 Q. Do you have any reason to doubt
4 that the endowment for student at Amherst is
5 \$1.4 million per student?

6 A. That would seem high relative to
7 what I know, but I'd have to look at it. It
8 doesn't seem correct.

9 What's the source of the data?
10 Is this another one of your 83 percent price
11 increase things? I don't know where that's
12 coming from.

13 Q. What is it that you know that
14 suggests that number is high?

15 A. Just look at schools like
16 Chicago, you know, Brown, Columbia, 630,000.
17 You're asking me to believe that Amherst is
18 double what these Ivy League schools are? It
19 just seems very implausible.

20 Q. Do you know what Williams
21 College endowment per student is?

22 A. No.

23 Q. Do you know what Bowdoin
24 College's endowment per student is?

25 A. No.

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1 Q. Uh-huh.

2 A. I don't know if I can be
3 surprised anymore.

4 Q. And I take it you never compared
5 the expected cost of attendance at the
6 University of Michigan for out-of-state
7 students to say an unaided students who
8 attends Rice University; correct?

9 A. Correct.

10 Q. How distinct do prices have to
11 be before they meet your definition of
12 distinct prices?

13 A. Well, if I were to put an
14 economic lens on I would say the difference
15 should be economically significant. It
16 should be a material difference; as they are
17 in the Duke UNC example.

18 Q. Did you do a systematic analysis
19 of the differences, if any, in price between
20 what you call the private university and
21 public universities?

22 A. Not in that paragraph, I grant
23 you that.

24 Q. Did you do an analysis of the
25 material differences, if any, in price